Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A motor vehicle alternator comprising: a stator; a rotor mounted in the stator; a regulator circuit connected in the alternator and defining a variable reference voltage, the regulator circuit being ~~adapted~~ provided to vary the excitation of the alternator by comparing a signal representing the output voltage of the alternator with the ~~said~~ reference voltage; and a conversion circuit connected with the ~~said~~ regulator circuit and arranged to receive a pulse width modulated reference control signal, whereby the conversion circuit is ~~adapted~~ provided to vary the ~~said~~ variable reference voltage as a function of the reference control signal, wherein the conversion circuit comprises, in combination:

- an internal clock with a controllable variable period;
- a difference circuit connected to the internal clock for producing a difference signal between the period of the ~~said~~ reference control signal and the period of a signal from the internal clock;
- a control circuit for the internal clock, connected to the internal clock and the difference circuit, for controlling the clock in response to the ~~said~~ difference signal whereby to ~~equalise~~ equalize the period of the ~~said~~ clock signal with the period of the ~~said~~ control signal; and
- a voltage pulse width conversion circuit connected to the ~~said~~ clock and comprising a counter ~~adapted~~ provided to be paced by the ~~said~~ internal clock and to perform a count while the

reference control signal is at a given logic level, and a digital/analogue converter connected to the counter for converting a value of count supplied to the converter by the counter into a voltage such as to define the reference voltage of the regulator.

Claim 2 (currently amended) **[[An]]** The alternator according to Claim 1, wherein the ~~said~~ difference circuit comprises means for producing a symmetrical rectangular signal with a period which is a whole number multiple of the period of the reference control signal.

Claim 3 (currently amended) **[[An]]** The alternator according to Claim 2, wherein the difference circuit comprises a means for producing difference pulses between the ~~said~~ symmetrical rectangular signal and a signal produced from the internal clock.

Claim 4 (currently amended) **[[An]]** The alternator according to Claim 3, wherein ~~the difference circuit is adapted so that~~ the width of the difference pulses is proportional to the difference between the period of the reference control signal and the period of the ~~said~~ signal from the internal clock.

Claim 5 (currently amended) **[[An]]** The alternator according to Claim 3, wherein the difference circuit further includes means for producing a signal representing the direction of the difference signal, at least during the duration of the ~~said~~ difference pulses.

Claim 6 (currently amended) [[An]] The alternator according to Claim 5, wherein the control circuit for the internal clock comprises a bidirectional counter connected to the difference circuit for receiving the ~~said~~ difference pulses and direction signal, and a digital/analogue converter connected to the counter for receiving the output from the counter.

Claim 7 (currently amended) [[An]] The alternator according to Claim 1, wherein the internal clock is a voltage controlled oscillator.

Claim 8 (currently amended) [[An]] The alternator according to Claim 1, wherein the digital/analogue converter of the conversion circuit has a ~~memorisation~~ memorization input, the alternator further including means for applying to the ~~said~~ input a ~~memorisation~~ memorization signal so long as the ~~said~~ reference control signal is at a logic level other than the ~~said~~ given logic level.

Claims 9 (currently amended) [[An]] The alternator according to Claim 1, wherein the whole of the conversion circuit is an integrated circuit.

Claim 10 (currently amended) [[An]] The alternator according to Claim 9, including a semiconductor chip carrying the regulator circuit, wherein the same chip carries the conversion circuit.

Claim 11 (currently amended) An interface device for providing an interface between a control apparatus for supplying a reference control signal in the form of a pulse width modulated signal, and a motor vehicle alternator regulating device defining a reference voltage of the ~~said~~ regulating device, the interface device being ~~adapted~~ provided to convert the variations in the width of the pulses of the ~~said~~ reference control signal into variations in the ~~said~~ reference voltage of the regulating device, the interface device comprising, in combination:

- an internal clock with a controllable variable period;

- a difference circuit connected to the internal clock for producing a difference signal between the period of the ~~said~~ reference control signal and the period of a signal from the internal clock;

- a control circuit for the internal clock, connected to the internal clock and the difference circuit, for controlling the internal clock in response to the ~~said~~ difference signal, in such a way as to ~~equalise~~ equalize the period of the internal clock signal and the period of the ~~said~~ control signal; and

- a circuit for converting pulse width into voltage, connected to the clock and comprising a counter which is ~~adapted~~ provided to be paced by the ~~said~~ controllable internal clock and which is ~~adapted~~ provided to perform a counting operation while the ~~said~~ reference control signal is at a given logic level, and a digital/analogue converter which is ~~adapted~~ provided to convert a value of the count supplied to the converter by the ~~said~~ counter into a voltage such as to define the reference voltage of the regulator.

Claim 12 (currently amended) **[[An]]** The alternator according to Claim 11, wherein the ~~said~~ difference circuit comprises means for producing a symmetrical rectangular signal with a period which is a whole number multiple of the period of the reference control signal.

Claim 13 (currently amended) **[[An]]** The alternator according to Claim 12, wherein the difference circuit comprises a means for producing difference pulses between the ~~said~~ symmetrical rectangular signal and a signal produced from the internal clock.

Claim 14 (currently amended) **[[An]]** The alternator according to Claim 13, wherein ~~the difference circuit is adapted so that~~ the width of the difference pulses is proportional to the difference between the period of the reference control signal and the period of the ~~said~~ signal from the internal clock.

Claim 15 (currently amended): **[[An]]** The alternator according to Claim 13, wherein the difference circuit further includes means for producing a signal representing the direction of the difference signal, at least during the duration of the ~~said~~ difference pulses.

Claim 16 (currently amended): **[[An]]** The alternator according to Claim 15, wherein the control circuit for the internal clock comprises a bidirectional counter connected to the difference circuit for receiving the ~~said~~ difference pulses and direction signal, and a digital/analogue converter connected to the counter for receiving the output from the counter.

Claim 17 (currently amended): [[An]] The alternator according to Claim 11, wherein the internal clock is a voltage controlled oscillator.

Claim 18 (currently amended): [[An]] The alternator according to Claim 11, wherein the digital/analogue converter of the conversion circuit has a ~~memorisation~~ memorization input, the alternator further including means for applying to the ~~said~~ input a ~~memorisation~~ memorization signal so long as the ~~said~~ reference control signal is at a logic level other than the ~~said~~ given logic level.

Claim 19 (currently amended): [[An]] The alternator according to Claim 11, wherein the whole of the conversion circuit is an integrated circuit.

Claim 20 (currently amended): [[An]] The alternator according to Claim 19, including a semiconductor chip carrying the regulator circuit, wherein the same chip carries the conversion circuit.